

especially for students of human biology, prehistoric archaeology, anatomy and zoology. The second work is for the general reader and for the student and professional wishing to inquire further into the individualistic views of Teilhard de Chardin.

In the handbook by Day, there are three parts, the last being the largest. The first part (fourteen pages) briefly reviews the nature of the Pleistocene Period, its divisions and geology; the material cultures of the Palaeolithic; and the problems of dating. The second part (ten pages) is concerned with skeletal variability in so far as it is relevant to studies of human fossils: normal skeletal variation, sexual dimorphism, age changes, dental terminology and anatomy. The final part (240 pages) is a select guide to hominid fossils. This is not written as an exhaustive survey but rather as a review of the more principal fossil hominid fragments. What is unusual, and particularly valuable for reference purposes, is that the information for each specimen or group of remains is presented in the same systematic way throughout. Thus the facts are presented in the following sequence: name of finds; country of origin; region; synonym and other names; site; discoverer; geology; associated finds; dating; morphology; dimensions (selected); affinities (with other fossils and groups); location of original specimens (address of institution); availability of casts and institution distributing them; selected references.

The book also benefits from numerous excellent maps showing the location of the fossil finds, and many photographs of the specimens. A substantial glossary will also help the general reader.

Of a very different style is Teilhard de Chardin's work, comprising a series of essays concerned with his views on the origins of man. As much a philosopher as palaeontologist, he goes beyond a purely scientific account of human evolution, and expertly brings the palaeontological evidence into line with his belief in the guided evolution of life and the psychic parameters of man.

All essays are at least ten years old, and the first seven essays (each a chapter) are pre-World War II. It was wise of the publishers to invite Desmond Collins to write a preface for this

English edition, with a review of some of the more important developments in the last ten years. A longer survey of the present position would, I feel, have been even better, and for example, there was clearly no space to refer to such controversial genera as *Oreopithecus* or *Ramapithecus*, or the recent views of Tobias or Napier or Brace.

His bio-philosophical style is, to me, not an easy one and at times I found myself searching for a more "digestible" mode of expressing a term or sentence (e.g. "strongly pachyosteid" referring to the more robust australopithecines). But few errors in printing occur in this book (Fig. 6 is inverted; Drenna of the text and index is presumably referring to the anatomist Drennan).

Both works are to be recommended, but to a somewhat different group of readers, as already indicated.

DON BROTHWELL

ECOLOGY

Sprout, Harold and Sprout, Margaret. *The Ecological Perspective on Human Affairs with Special Reference to International Politics*. Princeton, NJ, 1965. Princeton University Press. (London, 1966. Oxford University Press.) Pp. xi+236. Price 44s. in UK only.

METAPHOR, AND RHETORICAL or poetic writing, if not overdone, are enlivening and serve to jolt the reader into attention. They act as gnomic summaries of what has been, or is being, said. The authors of this book dislike the style; but they do not always avoid it themselves. They exhibit for our disapproval scores of purple passages from the recent literature of history and geography, and argue that the perpetrators took their metaphors seriously and so were misled both in their "facts" and in their method of thinking about those "facts". Without reading all the works quoted it is impossible to assess the consequences of metaphor, reification, and the "pathetic fallacy", but I find it hard to believe that all these writers actually thought that "France felt", "mountains pushed", "the sea beckoned", and so on. More usefully, the authors discuss non-metaphorical language.

They point out that power is not necessarily military power (as Switzerland demonstrates); that influence would be better called political potential and can be attained in many ways, such as space research, art or sport; and that concepts, when used outside the context for which they were framed, can be dangerous. The rest of the book is a discussion of causality and a plea for greater objectivity and completeness in studies on the environment or milieu. Laboratory-based biologists will feel surprise, but not necessarily incredulity, on learning that these ideas are regarded as novelties in this domain of knowledge.

In 1956 an essay bearing on these themes was circulated for comment; it has been expanded and rewritten in the light of the comments. Causality is considered under the headings "Environmental Determinism", "Free-will Environmentalism", "Possibilism" and "Probabilistic Models of Behaviour". The authors have little use for the first and deride those who have maintained that certain aspects of history were inevitable. Their attitude is essentially that of Lowes Dickinson who, when asked if he was sceptical of all cause-and-effect relations, or inevitable sequences, in history, replied "No: I think it would be safe to say that every revolution has been preceded by some form of discontent".

"Possibilism" is the most interesting and useful of these categories; it involves thinking about what could be done, as a prelude to discussing what should be. The authors sometimes illustrate their argument with examples of agricultural change, but they do not deal with food as if it were a fundamental aspect of the ecological environment. This is odd because it illustrates the "Possibilistic" theme admirably. Southern California was, at first, a barren and inhospitable region; some classic descriptions of scurvy described the state of affairs there. It is now a major area of fruit and vegetable production because its possibilities were recognized and water was brought in. Orthodox geographers seem to think that it is an accident that the tropical rain forests are at present the least developed parts of the world. Unlike California, they do not need irrigation; their needs are more difficult to meet—imagination and research. Agricultural methods developed in the temperate

zone will probably not work there. If "Possibilism" were taken seriously, new methods would be devised.

On probability the authors are sensible. They share Macbeth's scepticism

If you can looke into the Seedes of Time,
And say, which Graine will grow, and which
will not,

and realize that no forecast is certain to be correct but that some are more probable than others. All planning involves prediction and they sum up their position: "The issue is not whether to predict or not to predict. The issue is rather what one may profitably try to predict, and how to go about it".

If geographers and historians are fairly represented by those pilloried here, reading this book will do them a great deal of good. Even the five or six pages devoted to the illusions that can spring from the use of Mercator's projection may be necessary. My impulse is to think that they cannot be so daft; but the authors may know better. It is their subject.

N. W. PIRIE

POPULATION

Stycos, J. Mayone and Arias, Jorge (Editors). *Population Dilemma in Latin America*. Washington, D.C., 1966. Potomac Books. Pp. xiii + 249. Price: paper, \$2.45; cloth, \$3.95.

THE PAPERS READ before the Pan-American Assembly on Population, held in Colombia in 1965, are here presented. The participants at the Assembly did not consist only of demographers but included representatives of government, business, the Church and other spheres of interest. The papers are, however, all demographic; they were designed as background reading for the conference discussions, which together with the findings and recommendations have been printed separately.

The ten background contributions are subdivided into three groups, entitled facts, problems and solutions. Under facts, there are papers by three different authors on the populations respectively of Latin America as a whole, of Brazil and of the non-Spanish-speaking part of